



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/921,495	08/03/2001	Robert C. Stoneman	CTI108	7647
7590 10/22/2003				
JAMES R. YOUNG 207 RED POPPY TRAIL GEORGETOWN, TX 78628		EXAMINER VY, HUNG T		
		ART UNIT PAPER NUMBER		
		2828		

DATE MAILED: 10/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/921,495

Applicant(s)

STONEMAN ET AL.

Examiner

Hung T Vy

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Paul Ip
PAUL IP
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

Art Unit: 2828

DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 –15 and 25-28 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Scheps, U.S. patent No. 6,404,785 in view of Ionov, U.S. Patent No. 6,137,813.

Regarding to claims 1 and 25, Scheps disclose a device for producing laser radiation comprising: a laser diode (102), a guide-wave laser (204) coupled to receive the output emission of the laser diode (fig. 2), an Er-doped solid-state crystal laser (114) being pumped by the wave-guide laser (Fig. 2), the Er-doped solid-state crystal comprises material selected from group YALO (See column 2, line 5), YAG (See column 1, line 18) but Scheps does not disclose the fiber laser. However, Ionov et al. discloses Yb-doped fiber laser (20). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify wave guide fiber as Scheps by having waveguide laser as taught by Ionov et al. so as to gain the advantageous benefit of a wavelength longer than 1.4 microns as invention.

Art Unit: 2828

Regarding to claims 5-15 and 29 - 39, Ionov et al. discloses Yb, Er-doped waveguide laser with wavelength 800nm to 1100nm (See abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have different material then depend on material, they will have different wavelength, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

3. Claims 16-24, 26-28 and 40– 48 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Scheps, U.S. patent No. 6,404,785 and Ionov, U.S. Patent No. 6,137,813 and further in view of Muller et al., U.S. patent No. 5,963,575.

Regarding claim 16-17 and 40-41, Scheps and Ionov disclose all limitation of device except for Q-switch the Er-doped solid-state crystal laser. However, Muller et al. disclose the crystal laser (3.2)(See column 3, line column 5 – 8) to enable to production of Q-switched output having high pulse energies (see column 3, line 39 – 50). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Scheps by having the Q-switch as taught by Muller so as to gain the advantageous benefit of a wavelength longer than 1.4 microns as invention.

Regarding to claims 18 – 21, 26-28 and 42-45, Muller et al. has discussed the output pulse width to between 0.1 microseconds and 1 microseconds (See column 3, line 21 – 22 as 200 ns to 1 microseconds). The solid crystal laser produces laser radiation at a predetermined wavelength of 1.55 to 1.7 microns, 1.643 to 1.648 microns and 1.644 microns to 1.645 microns (see column 3, line 56 – 58)

Art Unit: 2828

Regarding to claims 22-24, and 46 – 48, Muller et al. discloses the claimed invention as Er-doped solid-state laser except for dopant concentration of the Er-doped solid-state of laser from 1% to 5%. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to have that concentrate, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

4. Applicant's arguments filed on 08/11/2003 have been fully considered but they are not persuasive. Applicant made the following arguments:

a. "The examiner has miss-identified some of the components of Scheps, First, (204) is not a waveguide (i.e. guide-wave) laser, instead (204) is an optical fiber. See col.4, line 4, wherein Scheps states "laser diode 102 is coupled to waveguide upconversion laser 112 by an optical fiber 204". An optical fiber is a passive waveguide, not a laser. Further the act of coupling means the light is not being changed, thus the optical fiber 204 cannot be a laser. The waveguide (204) only serves to passively transmit the laser power (104) to the waveguide laser (112). Second, (114) is not pumped by a waveguide laser. Intend, (114) is the waveguide laser itself. More particularly, (114) is the waveguide region, and (112) is the waveguide laser." page 3-second full paragraph and page 4, first paragraph.

• Art Unit: 2828

b. "Thus, Scheps fails to disclose or suggest applicants claimed invention, comprising three lasers in series, as claim 16-17 and 40-48" page 04 fifth full paragraph.

c. "Scheps does not disclose a Q-Switch for the Er-doped crystal laser, because in Scheps the Er-doped crystal laser is a waveguide laser (112). The waveguide laser geometry is not compatible with insert of a Q-switch in the laser resonator, because of the integrated, monolithic nature of the waveguide geometry. Therefore, Scheps cannot be modified to Q-switch the waveguide laser, because a waveguide laser is not compatible with insertion of a Q-switch", first paragraph, page 5.

d. "A flash lam can not upper-state pump the Er-doped crystal laser, because the flash lam pumps a multiplicity of energy state. That is, the flash lam emission spans a broad band of wavelengths, and with that broad band of wavelengths are particular wavelengths, which pump different states. This causes problems because the multiplicity of excited states that are pumped by the flash lamp interact with each other to produce loss in a variety of ways, such as fluorescence loss, multiphono decay loss, cross-relaxation loss, and upconversion loss." Third paragraph, page 5.

In response to Applicant's argument a above, the applicant's argument is persuasive. Therefore, the rejection has been withdrawn.

In response to Applicant's argument b and C above, the applicant's argument is not persuasive because Scheps discloses the guide-wave laser output emission to

Art Unit: 2828

upper-state pump the Er-doped solid-state crystal laser device with the same structure as Er-doped (See rejection above) so it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Scheps by having the Q-switch as taught by Muller so as to gain the advantageous benefit of a wavelength longer than 1.4 microns as invention or three laser in series, as claimed.

In response to Applicant's argument **d** above, the applicant's argument is persuasive. Therefore, the rejection has been withdrawn.

Conclusion

5. When responding to the office action, Applicants are advised to provide the examiner with the line numbers and page numbers in the application and/or references cited to assist the examiner to locate the appropriate paragraphs.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (703) 605-0757. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Art Unit: 2828

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



PAUL IP

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Hung T. Vy
Art Unit 2828

October 2, 2003